

## ABSTRACT

The present invention is directed to an improved solar powered distillation system and method. The solar powered still may have a waterproof membrane that is extruded, molded, or sprayed-on. The membrane may be installed in a lightweight basin as a liner resulting in improved ease of still manufacturing and assembly as well as improved sealing. Further, the membrane may include silicone. In a preferred embodiment, the membrane material may be an opaque food grade non-toxic odorless, tasteless silicon<sup>t</sup>, for example, Dow Corning 40. In one variation, the solar still basin may be formed from an aluminum sided insulation material. In another variation the solar still may include a carbon filter attached to either the input or output of the solar still for filtering out VOCs. The solar still may further include adjustable legs that facilitate leveling the still to ensure the most efficient operation possible. The still may be provided to users in a kit and assembled on site to improve shipping. As constructed and used, the solar still of the present invention may be used as a portable cost effective means of providing distilled water in any location throughout the world.